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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,427	03/29/2004	Gerald Burt Kliman	RD-28,364-3	9782

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

CAZAN, LIVIUS RADU

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/810,427	Applicant(s) KLIMAN ET AL.	
	Examiner Livius R. Cazan	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 25-33 is/are pending in the application.
- 4a) Of the above claim(s) 25-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/29/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15, drawn to a first method of fabricating a machine stator, classified in class 29, subclass 596.
 - II. Claims 25-33, drawn to a second method of fabricating a machine stator, classified in class 29, subclass 596.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are directed to related processes. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, the two inventions are mutually exclusive, since Group I requires directly molding composite tooth tips into contact with respective teeth of the laminated stator yoke, which is not required by Group II, and Group II requires a step of coupling the stator teeth and the stator yoke, which is not required by Group I. Further the two groups are not obvious variants and have a materially different effect, i.e. produce structurally different stators.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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4. During a telephone conversation with Ann M. Agosti on 08/21/2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

6. It is noted that this application appears to claim subject matter disclosed in prior Application No. 09/683,900, filed 2/28/2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing

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date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference

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was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Objections

7. Claims 12-15 are objected to because of the following informalities: In claim 12, line 2, "fabrication a" should read --fabrication of a--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Mischler (US4255684 to Mischler et al.).

Regarding claim 1, Mischler discloses:

- Positioning pre-wound stator windings (14, 15, Figs. 1 and 4; see col. 1, ln. 45 to col. 2, ln. 15) around respective teeth of a laminated stator yoke (see Figs. 1 and 4)

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- Directly molding composite tooth tips (18, 19, Figs. 1 and 4; see col. 1, ln. 45 to col. 2, ln. 15; see col. 2, lns. 60-68) into contact with respective teeth of the laminated stator yoke

Regarding claim 2, the present specification discusses annealing before providing windings on the stator, as part of the conventional process (para. 0002, line 4). Therefore it is deemed that although Mischler does not specifically discuss annealing of the stator laminations, this operation is indeed performed, since doing so is part of the conventional process.

Regarding claim 3, the teeth point radially inward, and therefore the coils are inserted by sliding them radially over the teeth.

Regarding claim 7, the tooth tips are injection molded (col. 3, lns. 42-45).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. To the extent Applicant disagrees that Mischler discloses annealing the laminated stator yoke, claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mischler in view of Applicant's admitted prior art (APA).

Mischler discloses the same invention as the applicant, but does not specifically discuss annealing the laminated stator yoke.

APA teaches that it is conventional to anneal the laminated stator yoke (page 1, paragraph 0002).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to anneal the laminated stator of Mischler, in view of the teachings of APA, in order to produce a laminated stator core by the conventional method.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mischler in view of Satomi (JP7336992).

Mischler discloses the same invention as the applicant, except for the stator teeth including key notches.

Satomi teaches forming key notches in stator teeth, with tooth tips having portions corresponding to and designed to engage the key notches, as seen in Figs. 6-8.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teeth of Mischler with key notches, in view of the teachings of Satomi, so that the tooth tips would be attached to the teeth more securely.

13. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mischler in view of Crabb (US3862492).

Mischler discloses the same invention as the applicant, except for providing insulation around at least portions of the windings, the insulation comprising slot liners, and the providing being done prior to molding.

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Crabb teaches that it is known to employ slot liners (15, Fig. 1) prior to providing a winding on the teeth.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slots of Mischler with insulating liners, so as to prevent an exposed part of the winding to come into contact with the stator core, this being done prior to molding, since teeth are molded after the windings have been installed.

14. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidrich (US20020149282).

Mischler discloses the same invention as the applicant, except for situating the pre-wound stator windings on a mandrel in a pattern aligned with gaps between stator teeth and compressing pre-wound stator windings around respective teeth prior to molding.

Heidrich teaches that it is known to insert pre-wound coils on stator teeth by means of a mandrel aligned with the slots of the stator, the coils being pushed onto the teeth and fixed on the stator teeth (see col. 2, paragraph 0018).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the coils on a mandrel in a pattern aligned with the stator slots and compressing the windings in order to fix them around the teeth. This is done as the coils are inserted on the teeth, as in Mischler, and therefore before the molding operation.

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15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mischler in view of Kliman (US6274962).

Mischler discloses the same invention as the applicant, including forming the tooth tips by injection molding.

Mischler does not disclose compression molding the composite tooth tips.

Compression molding is an alternate form of molding, and it would clearly be a suitable replacement for the injection process disclosed by Mischler. Applicant's disclosure is in agreement with this assertion, since Applicant claims both the injection molding and the compression molding processes. Kliman teaches the use of compression molding to form molded teeth on a stator (see abstract) and it is therefore clear that it is known to use compression molding in manufacturing stators.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Mischler by utilizing compression molding instead of injection molding, in view of the teachings of Kliman, since compression molding is an art recognized equivalent process for injection molding.

16. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mischler and Kliman as applied to claim 11, in view of Heidrich (US20020149282).

Regarding claim 12, Heidrich teaches attaching pre-fabricated tooth tips to teeth of a stator, the windings having a shape selected to facilitate a tight fit with the tooth tip (see Fig. 1 for example).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Heidrich by providing coils having a

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shape selected to facilitate fabrication of a desired tooth tip shape during molding, such that the tooth tips press against the coils, fixing them on the stator poles.

Regarding claims 13 and 14, as it is known in the art, the mold used for compression molding must be hollow, the material to be compressed being placed in the mold and pressed so as to take the shape of the mold (see "Compression Molding" for definition of this process). In the instant case, in order to produce the tooth tips as discussed with respect to claims 11 and 12, the material clearly has to be pressed against the teeth and against the coils surrounding the teeth. This will therefore mold the tips and compress the coils at the same time.

Regarding claim 15, Mischler discloses molding the tooth tips from magnetic particles in a suitable binder (see col. 3, Ins. 30-45), these particles being the material in the hollow mold as discussed above, and are therefore compressed against the stator yoke.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See US2506173 and US2946796 regarding compression of coils against the teeth.

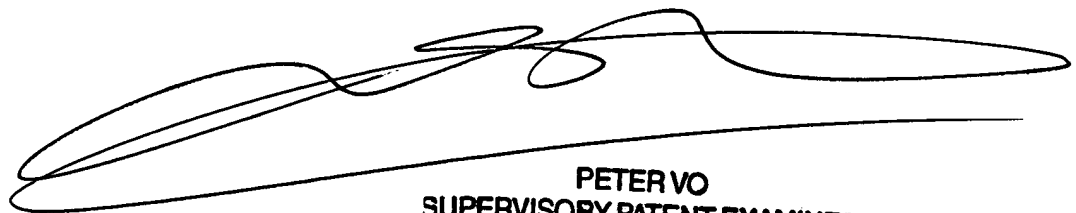
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 7:30AM-4:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LRC 08/29/2006

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the end.

**PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700**